

REMARKS/ARGUMENTS

Applicant responds herein to the Office Action dated September 5, 2007.

Claims 1-30 are the claims currently pending in the present application.

Independent claims 1, 6, 11, 16, 21 and 26 are amended to clarify features recited thereby. Specifically, the second processing chamber which includes the pure water processing part of rinse baths and a dry processing part is clarified to specify that the drying gas is a separate and different material from the inert gas which is used to completely replace the atmosphere within the second chamber. Support for such feature is for example as contained on pages 27-28 of the specification. Since the inert gas in the claims as originally stated was not for drying purposes and is not changed, specifying the already different nature of the dry processing part raises no new issues. Entry thereof is believed to be in order and is so requested.

The Examiner has maintained the rejection of claims 1-30 under 35 U.S.C. § 103(a) as being unpatentable based on HasegawaKoji (11-268827), in view of Shinbara (5,485,644) and Takano (6,828,235). In support of the rejection the Examiner cited Koji as teaching a first processing chamber 18 and a second processing chamber 19 with the second processing chamber including a pure water processing part (the Examiner has however failed to note that chamber 18 also has a pure water processing part in the form of tank 13). The Examiner noted that Koji does not teach a processing chamber with a dry processing part in the same chamber as the pure water processing part. Koji does not disclose a third opening between the first and second processing part or a third shutter for the third opening or a fourth transport mechanism. The Examiner accordingly cited Shinbara et al as teaching first and second processing chambers 3 and 4 with chamber 4 having a rinse and drying process. The Examiner accordingly considered it obvious to one skilled in the art to provide openings between the first and second chambers of Koji and to integrate rinsing and drying in a single chamber. The Takano reference was cited as teaching the continuous supply of nitrogen to keep the chambers clean.

In reply thereto it is submitted that each of chambers of Koji, 18 and 19 have both liquid chemical processing chambers and a directly associated rinse tank. There is no isolation between the chemical processing chamber 12 and rinse tank 13 in chamber 18 nor is there an isolation between chemical processing chamber 14 and rinse tank 15 in chamber 19. External wall 21 and

shutter 26 may isolate chamber 12 and rinse tank 13 from the transport chamber, as posited by the Examiner, but this is not a separation of chamber 12 and rinse tank 13. The present claims provide the chemical processing chambers in the first chamber and the water processing part with dry processing part separately in the second chamber.

The Examiner has tried to equate water, including the de-ionized water of the Shinbara reference, with liquid chemical processing since water is a chemical known as a universal solvent. However, as specifically used in the present application and claims, water and water processing is specifically different from chemical processing (with both being specified and claimed as being separate) and unlike the references, water and water processing are not equated with chemical processing and are kept in separate chambers and their differing atmospheres are isolated from each other in separate chambers.

The Examiner has noted the fact that the Koji reference does not disclose drying and relies on the teachings of Shinbara and Takano as teachings of the use of inert gases to be used in the Koji system. However, as clarified, the inert gases of the secondary references is not the dry process material of the present invention. Inert gas in the present invention is to sweep the atmosphere in each of the chambers and it is a secondary material which specifically effects the drying process and this is isolated from the chemical process chamber. Water vapor and excess drying gas is swept from the water processing chamber and kept from being transferred between first and second processing chambers when the third shutter opens.

In basic terms, the Examiner is suggesting that chambers 18 and 19 are equivalent to the first and second chambers claimed herein and that the secondary references would suggest opening chambers 18 and 19 to each other with a shutter, in order to provide the presently claimed invention. Not only would this be without logical basis but it would actually be detrimental to the fundamental process. In Koji, each chamber 18 and 19 is provided with both chemical processing and rinsing tanks, i.e., there is a single chemical contaminant to be removed in each chamber. The Examiner's suggested modification would essentially result in a chemically treated substrate in chamber 18 bypassing a contiguous rinsing tank in order to effect rinsing in another chamber having a different chemical processing tank. This would effectively increase possible contamination for a single substrate treated in tank 12 in chamber 18 with material and

vapor of a second chemical in tank 14, in order to utilize water processing tank 15 in chamber 19. This is without reason or purpose except for meeting the claimed structure of the present claims. In the present system, as claimed, all the chemical processing is in one chamber and the water processing and drying is in another chamber kept separate and isolated from contamination with the chemicals and the chemicals are kept separate and isolated from water vapor and the materials used in effecting the drying process. Even were the Examiner's suggested combination of references viable, this contaminant isolation would not be provided, since Koji cannot be modified in view of the cited references to separate and isolate water processing from chemical processing even with the providing of a third opening and shutter as suggested.

In addition, since Shinbara et al is concerned only with rinsing and drying with deionized water there is no problem with interaction of materials used for drying with chemical processing. Simple combination of drying process of Shinbara et al in the Koji system with direct interaction with chemical processing materials in each of chamber 18 and 19 would actually this be avoided by one skilled in the art. This would especially be true in view of the Examiner's suggested introduction of an additional opening albeit with a shutter between chambers 18 and 19 since there is an additional chemical processing material to contend with.

As stated above, none of the cited references teach or suggest that the atmospheres in the areas for performing chemical liquid process and rinse and dry process are isolated from each other. Moreover, no motivation can be found in the cited references to provide a third shutter between the first processing chamber for performing chemical liquid process and the second processing chamber for performing a rinse and drying process. In fact, one skilled in the art would actually be led away from such combination in view of the detrimental effect in the Koji configuration.

For at least the above-stated reasons, claims 1, 6, 11, 16, 21, and 26 are not rendered obvious over Koji, Shinbara, or Takano. Reconsideration is accordingly respectfully requested.

Claims 2-5 depend from independent claim 1, claims 7-10 depend from independent claim 6, claims 12-15 depend from independent claim 11, claims 17-20 depend from independent claim 16, claims 22-25 depend from independent claim 21, and claims 27-30 depend from independent

claim 26. Therefore, claims 2-5, 7-10, 12-15, 17-20, 22-25, and 27-30 are patentably distinguishable over the cited art for at least the same reasons as their base claims.

Conclusion

In view of the foregoing discussion, withdrawal of the rejection and allowance of the application are respectfully requested.

Accordingly, the Examiner is respectfully requested to reconsider the application, allow the claims as amended and pass this any questions regarding the present Amendment, or regarding the application generally, the Examiner is invited to telephone the undersigned attorney at the below-provided telephone number.

THIS CORRESPONDENCE IS BEING
SUBMITTED ELECTRONICALLY
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Respectfully submitted,



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